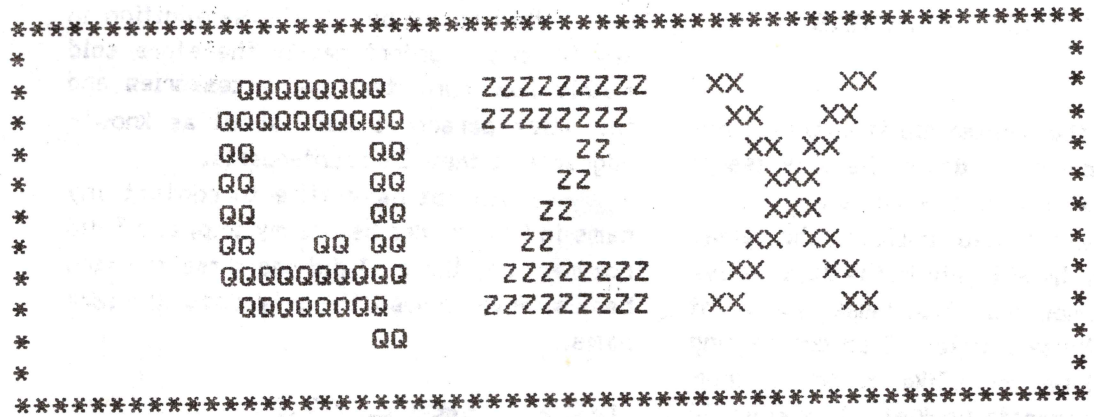
QQQQQQQQ ZZZZZZZZZ XX XX
QQQQQQQQQQ ZZZZZZZZ XX XX
QQ QQ ZZ XX XX
QQ QQ ZZ XXX
QQ QQ ZZ XXX
QQ QQ QQ ZZ XX XX
QQQQQQQQQQ ZZZZZZZZ XX XX
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QQ

The Journal Covering Amateur Radio & Sinclair Computers
ZX80; Micro-Ace; ZX81; TS1000, 1500, & 2068; QL; Z88

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EDITOR'S NOTES

K5XY

Well, the printer did it again. I got yet another price for doing the July issue. (That sentence sure looks familiar.)

Last month also concluded the series of articles on the SCL chip in the ZX81 series of Sinclair computers. Don Lamen put a lot of work into those articles. I am considering asking him if he would like me to put them into a small separate booklet. If you would be interested in such an inexpensive booklet, drop me a card. If you found any typographical (or other) errors in the series, I strongly urge you to drop me a card pointing out the error. Help eradicate errors in print.

This month an article on the internal timing of the TS2068 is included to go with the timing information on the TS1000 which was included in Lamen's articles.

I was encouraged to find a number of renewals upon my return from El Salvador. It was interesting to note that half of those renewing did not have an amateur license.

I am happy to be back and plan to stay in the USA for a while. El Salvador is really beautiful, the people friendly and not as poor as in some of the countries I have been in, and the weather not too hot and only rainy at night. However the efforts by some to change the base of the government did interfere a bit with my work. This work, along with other efforts, involved finding a very good personal computer system lost during the November 1989 guerrilla attack on the capital and getting it running. I spent most of my time in the University of El Salvador and a couple of outlying hospitals. Most of the University buildings were badly damaged by an earthquake in 1986 or the army occupation in 1989.

I did not find any trace of a Timex or Sinclair computer. I did find a modern computer store (and school) just across the street from my hotel in an excellent shopping center that would be a welcome addition in any US city. Unfortunately the store sold mainly IBM computers and accessories and the sales personnel were about as knowledgeable as their US counterparts.

I did not have time to contact any hams in El Salvador before my trip, and I did not meet any there. I did see three tri-band beams, however, so the city does not lack hams.

QZX FRIENDS

W1SSP -- Ed renewed and sent a contribution to the postage fund. He also stated that the articles were getting a little over his head. I will be happy to publish any more basic articles which are submitted.

KA6OCD -- Coyt also renewed and sent in a contribution to the postage fund.

BITS AND BYTES

138 Heating problems in the QL will be greatly reduced if the 5 volt regulator is partially bypassed by a resistor. One recommendation is to use a 20 ohm 5 watt resistor. It can be placed between pin 32 of the expansion connector (9 volt supply) and the wire along side the CPU ending near the middle of the left side (5 volt supply).

139 Those of you who have gotten 5 1/4 inch disc drives may be interested in the following substitute for the cheap write-protect tabs which tend to peal off the discs. Some 3M number 33 electrical tape in the 5/8 inch size is just right to cover the write-protect notch.

140 Those using Spectrum emulators on the TS2068 should remember that many Spectrum tapes are recorded at a lower volume than is usual for TS2068 tapes. Increase your playback volume accordingly.

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MODEMS AND TNCS

WA6DLI

1. Modems and TNCs for Sinclair family.

How many of you have your Timex Sinclair gathering dust? Perhaps you have forgotten what to do with it or somehow think it is obsolete in the age of the IBM clone dinosaurs with huge memory appetites?

Well it could be more useful than you know..have you connected a modem to it or though was it could do? Well, a modem will connect to any telephone BBS, another computer, a TNC, and various other terminals. Let's look at what is available in interfaces to connect to a modem. Why an interface..because like the Commodore and other home computers, Timex Sinclair did not provide the standard RS-232C serial port that a modem expects. The Sinclair QL did but it is sort of primitive and for best results it needs an interface too.

Let's look at what we can get..some of these sources are getting old so better check for current prices..might ever be better.

For the TS-1000 and ZX-81 (and I believe the TS-1500) a neat little device, once advertised in QZX too, is the ComLink I. It provides an RS-232C connection AND A TERMINAL program in ROM with some memory..so that nothing else is needed. The terminal program also provides some keystrokes needed on terminals and not in usual keyboard of Timex like CTRL Z for example. If you want one write to:

A. Eckhardt
918 Anna Street
Boalsburg, PA 16827

The ComLink I was $54.95 complete at last purchase a couple of months ago. (This with an external keyboard if preferred, will connect to a TNC..as with WA6OJJ's famous briefcase station.

For the TS-2068..there was the Timex 2050 Modem which never got

sold as a Timex but was sold briefly by the maker, and later as surplus circuit boards. If you can find a complete 2050 in a sale at a bargain get it..they were $125. The circuit boards have been sold by Ed Grey Enterprises, P. O. Box 2186, Inglewood, CA 90305

Ed sells an I/O board for the TS-2068 with a free 2050 board. And a terminal program..write or call him at 213 759-7406. He has a Timex BBS on 213 971-6260 Grey Matter BBS! He also sells the Larkin line of disk drive interfaces for 2068, modems, and various other goodies.

For the QL, Sinclairs best and with one of the best operating systems somewhat superior to the clones, MACs and Ataris...and much more programmable that an Amiga, there is the Modapter. This
corrective interface to make the QL like modems is available from Sharps Inc., Box 326, Mechanicsville, Va 23111 (804 730-9697). It is about $65 and comes with a terminal program called QCode.

The latter is what was mentioned in the QL on Packet article by W6JPB submitted by WA6DLI.

The QL is worth the $99 from Sharps (+$10 shipping) just to use as a packet computer..it has its own storage media system built in and works with a TV or monochrome monitor out of the box. My friend N6VBM had never seen a computer or a ham rig when he got his ticket and is a successful packet operator..while he tries to master Quill and the other computer uses.

The ultimate QL system is owned by a friend of mine in the San Francisco area..he got a bargain QL for $99 at my suggestion. He fell so much in love with it that he has added a NEC Multi-sync monitor, TrumpCard disk interface with disk drives and memory expansion to 940K, a Panasonic 1124 printer, and just recently the Miracle Hard Drive system. He has several QLs and two systems that can switch the printer and monitor, as QLs network easily he can also read 3.5 inch drives from the other machine with 5.25 inch drives. There is plenty of good software available for this system including all the European user groups disks via QUANTA.

If you have a modem and haven't found anything interesting to do with it lately, here is a list of HAM related telephone bbs that I downloaded from packet today..Jan 8, 1990. Maybe one is near you and worth a try. I have not connected to them so have no idea of the quality.

***** W3INK HAM RADIO BBS LIST ***** 12/31/89 *****

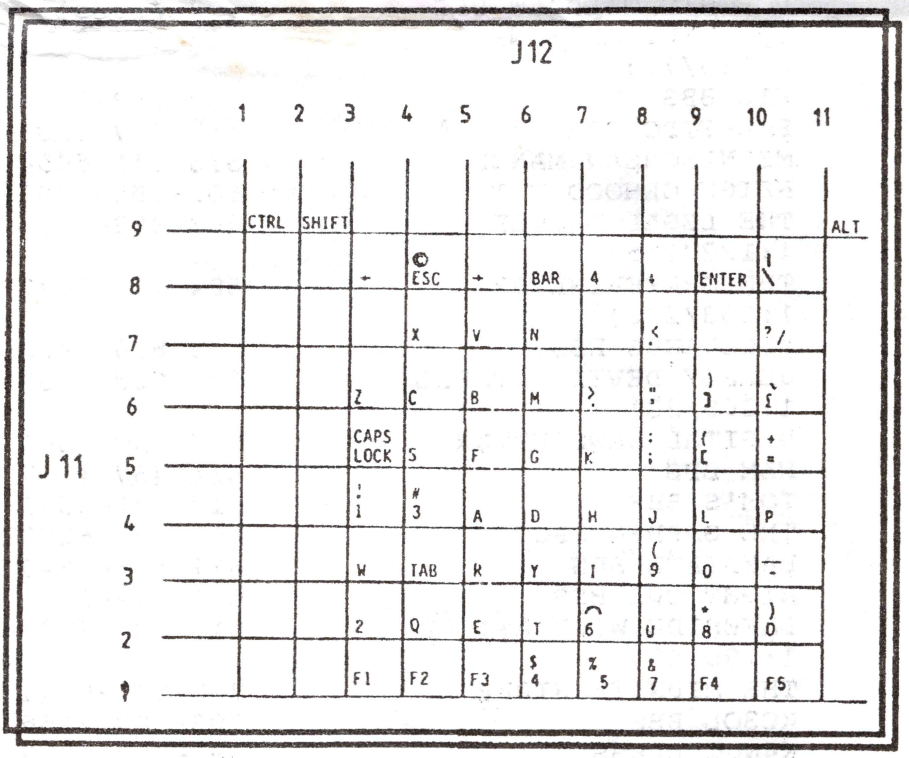
WB2TIX RADIO BBS	201-271-4517	NJ
THE CRYSTAL MOUNTAIN BBS	203-228-1708	CT (FIDO 1:320/777)
BRUCE'S BAR & GRILL	203-236-3761	CT
INFO-LINK	203-295-8374	CT
TRUMBULL-MINI	203-261-6434	CT (WA1QKS)(FIDO 1:141/370)
ORIONS NEBULA	203-431-8453	CT (N1CUI)(FIDO 1:141/705)
THE FARM AT MILLDALE	203-628-4644	CT (FIDO 1:141/880)
ARRL BBS	203-665-0090	CT (W1AW)

TELETALK	203-674-1802	CT
DAVE'S OPUS	203-871-3791	CT
DAVE'S BAR & GRILL	203-888-8375	CT (KA1TFB)(FIDO 1:141/525)
AMATEUR WORLD	213-377-0450	CA (N6OQU)
DATALINK BBS (AMSAT)	214-394-7438	TX (N5ITU)
HAM-NET	215-233-4313	PA (NEFAD/W3KBM)
BETTER AMATEUR RADIO	216-237-8208	OH (KB8NW)
CLEVELAND HAMNET	216-942-7516	OH (WB8APD)
	216-942 6382	OH (WB8APD)
3 WINKS BBS	301-670-9621	MD (W3INK)(FIDO 1:109/418)
	301-590-9629	MD (W3INK)
AROUND AND ABOUT	301-621-9669	MD (WA3TKW)
THUNDER BAY TRADING POST	301-831-9012	MD (WA3ZLB)(FIDO 1:109/676)
WB3FFV	303-335-1955	CO
MEDICAL SOFTWARE EXCHANGE	305-325-8709	FL (FIDO 1:135/3)
BILL'S BBS	312-674-1638	IL
GENESIS II	313-291-2520	MI (FIDO 1:120/14)(WB8ZPN)
SOMEWHERE IN TIME	313-482-4436	MI (KE8JY/N8KJL)(FIDO 1:120/159)
BOATMEN'S BANCSHARES	403-254-0155	ALBERTA, CA
ALTA PACKET INFO NET	403-464-5069	ALBERTA, CA (FIDO 1:342/7)
HAMS BBS	404-363-1640	GA (WA4CBT)
LOCKHEED ARC BBS	404-949-0687	GA
PCLOGIC WILDCAT BBS	407-338HB)(FIDO 1:387/510)	
THE NEUTRAL ZONE	513-253-2017	OH (NU8H)(FIDO 1:110/73)
KIC-BBS	513-762-1115	OH (KA8AWY)
PME-FIDO BBS	513-777-1234	OH (WB8BFW)
MELNIBONEAN MANOR	513-851-6454	OH
NEIGHBORHOOD NET	602-495-1797	AZ (KB7DJE)
THE LEGAL BEAGLE	603-883-4466	NH (K1TCD)(FIDO 1:132/115)
THE GRAPEVINE BBS	604-764-4672	KELOWNCE BC (FIDO 1:153/220)
PINELANDS RBBS	609-859-1910	NJ (W2XO)
JERSEY DEVIL CITADEL	609-683-2152	NJ (K2NE)(FIDO 1:266/33)
DIGITAL NEWSLETTER	612-HAM-0000	MN (K0TG)
HAM BBS	614-457-4227	OH (N8EMR)
TOM'S BBS	617-471-0542	MA (KA1TOX)
THE GARDEN SPOT	617-545-6239	MA (NS1N)
BAYSTATE BBS	617-598-6646	MA
NIGHT OWL BBS	619-279-3921	CA (WB6BDY)
LAKESIDE WILDCAT! BBS	619-390-7328	FL (N6CQW)(FIDO 1:135/63)
THE MIDNITE RIDER	703-591-5744	VA
KC3OL BBS	703-689-7156	VA (KC3OL)
K4NGC LLBBS	703-680-5970	VA (K4NGC)(FIDO 1:109/211)
AMRAD BBS	703-734-1387	VA
DAS SPITZEN SPARKEN BOARD	703-791-6198	VA (WD4AZG)
SAMSON BBS	708-394-0071	IL (KB9DIP)(FIDO

```
1:115/108)
THE ELK GROVE REPEATER          708-529-1586   IL (FIDO 1:115/529)
COPE OF CHICAGO                 708-790-0187   IL (FIDO
1:115/777)(KB9X)
PTSE                            713-480-1840   TX
STORMY WEATHER II               713-644-4345   TX
ACOM II                         713-879-1448   TX
PCEVE                           713-955-7564   TX
F.O.G.                          714-638-2298   CA (N6GIS)(FIDO 1:103/
THE PUBLIC SERVICE BBS          717-763-8210   PA (N3FUD)(FIDO 1:270/
TIDEWATER MESSAGE EXCHANGE      804-622-9002   VA (KA2YXH)
THE FLAMETHROWER     BABBLE                817-281-0612   TX (FIDO 1
TEXAS CONNECTION                817-540-1835   TX
CSC CONSULTING BBS                          918-250-8495   OK (WB5RWS)(
1:170/605)
**** PLEASE PROVIDE SUGGESTIONS AND CHANGES TO      ****
**** THE 3 WINKs BBS, 301-670-9621, NODE 1:109/418 ****
IF ANYONE IS MISSED, MY APPOLOGIES.  LET ME KNOW AND
I'LL ADD IT / STAN / W3INK @ W3INK.
----- End of message 16698 from W3INK @ W3INK. -----
```

KEYBOARD MATRIX CHART

The following chart is reproduced from Fig 4.16, Sinclair service manual of October, 1985. Later issues apparently didn't include it - perhaps to sell more keyboard matrices. It has errors in it, but it'll serve as a starting point for construction of GOOD QL keyboards.


J12
1 2 3 4 5 6 7 8 9 10 11
J11
9 CTRL SHIFT ALT
8 ← © ESC → BAR 4 ↓ ENTER
7 X V N < ? /
6 Z C B M > ") £
5 CAPS LOCK S F G K : ; { [+ =
4 ! 1 # 3 A D H J L P
3 W TAB R Y I (9 O _ -
2 2 Q E T ^ 6 U * 8) 0
1 F1 F2 F3 $ 4 % 5 & 7 F4 F5

OPTICAL HORIZON

W4EDL

Here is a short program which tells how far away the optical horizon is from a point above the surface of the earth. The program can be used for laser or IR transceivers although it assumes that the receiving antenna is at the surface of the earth. It also assumes that the earth is a perfect sphere with no atmosphere. Nevertheless it can give some idea of the line of sight range of signals. This program is very simple. If there is interest, a more complicated and realistic one could be written.

```
 5 REM This program gives the optical horizon in miles when the
height above sea level (in feet) is known.
 7 PRINT AT 1,7;"OPTICAL HORIZON"
10 PRINT AT 4,1;"ENTER HEIGHT OF EYE ABOVE"
11 PRINT AT 5,1;"SEA LEVEL IN FEET"
20 INPUT HEIGHT
25 PRINT AT 8,7;"HEIGHT"
30 PRINT AT 10,1;HEIGHT, "";"FEET"
40 LET A=HEIGHT
50 LET B=SQR (A/4*5)
55 PRINT AT 12,7;"HORIZON"
60 PRINT AT 14,1;B,"MILES"
```

The key to the whole program is in line 50. It is in that line that the serious calculation is done. All the other lines just collect the input data and provide some screen formatting. If you are a beginning programmer you might want to use this program to practice formating commands and to add a bit of error checking to the input statements.

73, K5XY

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* Thanks.  (90/08)                        *
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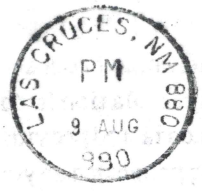

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